UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/613,422 | 07/02/2003 | Lucy M. Bull | B500790 | 5145 |

23552 7590 12/13/2010
MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

| EXAMINER | |
|---|---|
| SINGH, PREM C | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1771 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 12/13/2010 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/613,422 | BULL ET AL. | |
| | Examiner | Art Unit | |
| | PREM C. SINGH | 1771 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06 December 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,5-18,21,22,25-27 and 30-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-18,21,22,25-27 and 30-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/06/2010 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 5-18, 21, 25-27, 30, 31 and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al (US Patent 2,877,257) ("Cain") in view of Moore, Jr. et al (US 2002/0173556 A1 ) ("Moore") evidenced by Roy-Auberger et al (US 2002/0013375 A1) ("Auberger").

4. With respect to claims 1, 2, 5-18, 21, 25-27, 30, 31 and 34-39, Cain reference discloses a process for removing metal contaminants from a Fischer-Tropsch derived hydrocarbon stream. At least a portion of these contaminants would necessarily originate from the processing equipment and catalyst. The process comprises passing the hydrocarbon stream to a treatment zone where the hydrocarbon stream contacts an aqueous acidic stream that is passed to the treatment zone (i.e., extraction column). The acidic stream should have a strength corresponding to concentrations of sulfuric

acids ranging from about 1.5 to about 50 weight percent. These concentrations would necessarily be within the claimed ranges. The resulting mixture that includes precipitated solids is then separated to recover an extracted hydrocarbon stream and a modified acidic stream. The separation of precipitated solids is expected to be using an appropriate device, including filtration. The acidic stream can comprise an inorganic acid such as sulfuric acid or an organic acid such as acetic acid. The acidic stream used in the process may also comprise the aqueous phase produced in the F-T process. This produced aqueous phase contains acetic acid. Also, the examples in the Cain reference clearly are batch treatments but it is also clear from Figure 2 that the process can be operated continuously. The extraction step is performed until essentially all the iron is removed from the hydrocarbon stream. This would necessarily disclose the limitations of claim 26 (See column 1, lines 15-36; column 2, lines 48-51; column 3, lines 9-35 and 52-75; column 4, lines 1-43; column 7, lines 41-73; column 8, lines 1-24; the examples, and Figure 2).

The Cain reference also discloses that acetic acid is used in the extraction processes. Therefore, such an extraction would necessarily produce a third phase as claimed.

The Cain invention discloses a temperature of 550-700°F in the FT synthesis (See column 1, lines 35-36), however, the invention does not appear to specifically disclose using a slurry reactor, a cobalt catalyst, removal of aluminum contamination, size of the contamination, and also does not disclose that the hydrocarbon product is paraffinic and waxy. The Cain reference also does not disclose the extraction conditions

of claim 27 and does not disclose passing the acid extracted F-T derived hydrocarbon stream to a hydroprocessing reactor and then hydroprocessing this stream.

The Moore reference discloses that F-T streams comprising primarily paraffinic waxy hydrocarbons (See paragraph 0003, 0081) are produced in processes that utilize slurry reactor (See paragraph 0078, 0081), a temperature of 300-700$^{o}$F (See paragraph 0076) and catalysts such as iron or cobalt (See paragraph [0079]). The Moore reference also discloses that F-T derived streams may be fractionated (i.e., distilled) and hydrotreated (See paragraphs [0047] and [0048]). Moore further discloses that the F-T catalyst generally comprises support materials including alumina (See paragraph 0079). This clearly indicates that when Moore is using a slurry reactor, cobalt catalyst and alumina support, similar to the claimed invention, Moore's product stream is necessarily expected to contain Al contamination in particulate form as claimed.

Auberger discloses a process of FT synthesis using Group VIII metals including iron and cobalt, supported on alumina (See abstract, paragraph 0035) similar to Moore. Auberger also discloses that cobalt based catalysts used in a three-phase reactor can lead to excessive losses of catalyst in the paraffin waxes produced, by formation of submicron fines (See paragraph 0007). Thus, Auberger teaching is evidence that the catalyst used in the Cain/Moore process is also expected to have submicron fines comprising Al.

In view of Moore disclosing that iron or cobalt can be used as FT catalyst, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to have modified the process of Cain by using a cobalt catalyst and a slurry reactor in the F-T step as suggested by Moore. It is expected that the Cain's process will be equally effective with cobalt catalyst also. See *In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).* Thus, the modified Cain/Moore process, while removing iron contamination from the FT product stream, is expected to be removing Al contamination also in particulate form as claimed (See Cain, column 1, lines 15-36; column 2, lines 48-51; column 3, lines 9-35 and 52-75; column 4, lines 1-43; column 7, lines 41-73; column 8, lines 1-24; Moore, paragraph 0079).

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by distilling and hydrotreating the purified hydrocarbon stream as suggested by Moore because a stream with fewer undesired components will be produced. Although Cain does not appear to specifically disclose temperature and residence time in the extraction step, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize optimum conditions, including as claimed, for an effective removal of contaminants. Since extraction step in Cain's process removes substantially all the iron, the treated stream is expected to be free of foulants likely to plug the catalyst beds in the hydrotreating reactor.

5. Claims 22, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cain et al. (US 2,877,257) ("Cain") in view of Moore, Jr. et al. (US 2002/0173556 A1 ) ("Moore"), evidenced by Roy-Auberger et al (US 2002/0013375 A1) ("Auberger") as

applied to claims 1, 2, and 5-18 above, and further in view of Zhou (US 6,476,086 B1) ("Zhou").

6. With respect to claim 22, Cain invention discloses using a soap solution (See column 2, lines 17-62), however, the invention does not appear to specifically disclose adding a surfactant to the hydrocarbon stream.

The Zhou reference discloses a process for separating sub-micron size contaminant particles from an F-T derived stream (See column 1, lines 17-28). The process comprises contacting the stream with a composition that comprises a surfactant. The reference also discloses that filtration techniques have been used to separate solid contaminants from F-T derived streams (See column 1, lines 29-40 and 65-67; column 2, lines 1-67; and column 3, lines 1-11).

In view of Zhou teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teachings of the previously discussed references by adding a surfactant to the hydrocarbon stream as suggested by Zhou because the addition of a surfactant is expected to enhance the separation process similar to the use of a soap solution.

7. With respect to claims 32 and 33, Cain reference discloses production of Fischer-Tropsch derived hydrocarbon stream by passing syngas to a FT reactor (See column 1, lines 30-54). Figure 2 of Cain invention also discloses that the downstream processing

of the FT products is a continuous process. This implies that FT synthesis should also be a continuous process.

As discussed earlier, the Cain reference does not disclose that an additive is added to the reactor and does not disclose filtering the hydrocarbon stream after the adding step. The reference also does not disclose adding a surfactant to the hydrocarbon stream or passing the F-T derived hydrocarbon stream to a hydroprocessing reactor.

The Moore reference discloses that F-T streams are produced in processes that utilize catalysts such as iron or cobalt catalysts. See paragraph [0079]. The Moore reference also discloses that F-T derived streams may be fractionated (i.e., distilled) and hydrotreated (See paragraphs [0047] and [0048]). Moore also confirms that the FT synthesis is a continuous process (See paragraph [0076]).

The Zhou reference discloses a process for separating contaminant particles from an F-T derived stream. The process comprises contacting the stream with an additive composition that comprises a surfactant. The reference also discloses that filtration techniques have been used to separate solid contaminants from F-T derived streams (See column 1, lines 29-40 and 65-67; column 2, lines 1-67; and column 3, lines 1-11). Zhou also discloses use of an internal filter for slurry-bed iron catalyst FT reactors (See column 1, lines 29-31, 50-53).

It would have been obvious to one having ordinary skill in the art to modify the process of Cain by adding the acid to the reactor because the same purification would

take place with the added benefit of cost savings due to the reduced equipment requirement.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by filtering the product resulting from the extraction step as suggested by Zhou because filtering will remove any solid contaminants from the product.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by adding a surfactant to the hydrocarbon stream as suggested by Zhou because the addition of a surfactant will enhance the separation process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Cain by hydrotreating the purified hydrocarbon stream as suggested by Moore because a stream with fewer undesired components such as sulfur, nitrogen and olefins, will be produced.

## ***Response to Arguments***

8. Applicant's Declaration and arguments filed 12/06/2010 have been fully considered but they are not persuasive.

9. In the Declaration, the Applicant argues that:

Cain discloses that its invention is particularly applicable to the so-called primary oil stream which is separated from the mixture of products produced by synthesis when carbon monoxide and hydrogen are reacted with a promoted iron catalyst at pressures in the range of about 150 to 500 psig, and temperatures in the range of 550 to 700°F (288 to 371°C), and that this stream contains large amounts, ranging from 10 to 30 %, of organic chemicals such as acids, alcohols, ketones, aldehydes, esters, etc. The catalyst, operating conditions and high oxygenate containing product slate are typical of so-called two-phase fluidized bed Fischer-Tropsch synthesis. A person skilled in the art at the filing date of Bull (July 2, 2003) would have had no expectation of Al contamination in a waxy paraffinic product stream produced using the parameters claimed in the independent claims of Bull. In particular a skilled person would not have expected contamination that is not filterable down to 0.1 Micron and believed to comprise aluminum metal present in a complex organic matrix. There is no equivalence of the primary oil stream that is treated by the process of *Cain* (containing large amounts, ranging from 10 to 30 %, of organic chemicals such as acids, alcohols, ketones, aldehydes, esters etc.) when conducting a Fischer-Tropsch process using the parameters as claimed in the independent claims of Bull. In particular, the waxy paraffinic stream treated in the process of Bull has a very low oxygenate content. It consequently would have been illogical for a

skilled person to modify the process of Cain by using a cobalt catalyst and a slurry reactor as suggested by Moore. Rather, a skilled person would have regarded the teaching of Cain as being irrelevant to a Fischer-Tropsch synthesis process using the parameters claimed in the independent claims of Bull.

In response, it is the examiner's position that Cain invention discloses the operating conditions in the FT synthesis using iron catalyst to produce a product slate containing 10-30% oxygenates (See column 1, lines 30-54), however, the invention does not appear to specifically disclose the type of the reactor used. Moore discloses operating conditions overlapping Cain's conditions in the FT synthesis using iron/cobalt catalyst to produce a product slate containing as much as 50% or even higher, alcohols and olefins (See paragraph 0076, 0079, 0081). Moore also discloses that the reaction can be conducted in a variety of reactors including fixed bed, fluidized bed, slurry, or a combination, however, a slurry reactor is preferred because of superior heat and mass transfer characteristics (See paragraph 0078). This clearly indicates the similarity between Cain and Moore processes. Moore's teaching is evidence that the reactor type is not expected to affect the oxygenate content of the FT product as argued. It is to be noted that the oxygenate content is not a part of the claimed invention. Auberger discloses that cobalt based catalysts used in a three-phase reactor can lead to excessive losses of catalyst in the paraffin waxes produced, by formation of <u>submicron fines</u> (See paragraph 0007, emphasis added). Auberger also discloses that cobalt is supported on alumina or silica-alumina (See abstract, paragraph 0005, 0021, 0076).

Zhou also discloses FT catalyst based on iron being broken into submicron size particles in the slurry reactor (column 1, lines 17-28). Thus, Auberger and Zhou teaching is evidence that the catalyst used in the Cain/Moore process is also expected to have submicron fines comprising Al.

10. In the arguments on page 9-10, The Applicant argues that:

> Applicants note that independent claims 1, 25, and 32 specify that it is a Fischer-Tropsch derived *waxy paraffinic product stream* that is being treated in the presently claimed methods. The nature of the stream being treated in the presently claimed methods is significantly different from the steam in Cain. Iron catalysts under the conditions of Cain produces far more oxygenates and alkenes than a cobalt catalyst under the presently claimed conditions. Cain discloses that the hydrocarbon stream contains between 10 and 30 % of organic chemicals such as acids, alcohols, ketones, aldehydes, esters, etc. (i.e. oxygenates) (column 1, lines 36-39). In the process of Cain, there is no continuous liquid phase within the reactor and the reactor operates as a two-phase gas-solid process. In contrast with Cain, the independent claims specify that the hydrocarbon stream to be treated is a *waxy paraffinic product steam* produced in a slurry type reactor using a catalyst comprising cobalt at a temperature between 400 and 550°F (204 and 288 °C). A slurry type reactor operates as a three-phase gas-liquid-solid process and produces both products that are gaseous and liquid at the reactor operating conditions (paragraph 53,

paragraph 79 and paragraph 98). Accordingly, there is a vapor product stream and also a liquid product stream leaving the reactor. The vapor stream is predominantly the lighter products, while the liquid stream is predominantly waxy ($C_{20}$+). Claims 1, 25, and 32 are concerned with the treatment of this predominantly waxy liquid stream withdrawn from the reactor. The present invention is thus concerned with the problem of removal of contamination comprising aluminum metal present in a complex organic matrix from a *waxy paraffinic product stream* withdrawn in liquid form from a slurry reactor. In contrast, Cain is concerned with the removal of dissolved or occluded iron or iron compounds from a hydrocarbon stream containing between 10 and 30 % oxygenates that is withdrawn together with the gaseous phase from a fluidized bed reactor.

In response, it is the examiner's position that the Office action treats obviousness rejection based on <u>Cain and Moore together</u> (emphasis added). Cain simply discloses Fischer-Tropsch (FT) synthesis using iron catalyst (See column 1, lines 26-36) without specifically disclosing the details of the FT process. This is the reason why Moore reference has been used. Moore discloses using a three-phase slurry bed reactor operating at 400-550°F using iron and cobalt catalysts supported on alumina and producing tail gas to middle distillates as light products and highly paraffinic waxy products in the $C_{20}$+ range (See paragraph 0076, 0079, 0081). Thus, the combined Cain/Moore invention discloses a feed, reactor, operating conditions, product

distribution and removal of submicron contaminants comprising aluminum, similar to the claimed invention. This is evidenced by Auberger and Zhou.

12. In the arguments on page 11, the Applicant argues that:

> Even if combined, Cain in view of Moore does not disclose or suggest a method comprising passing an aqueous acidic stream to the treatment zone; extracting Al contamination from the Fischer-Tropsch derived waxy paraffinic product stream by contacting the Fischer-Tropsch derived waxy paraffinic product stream with the aqueous acidic stream in the treatment zone at extraction conditions to form a mixed stream comprising at least one acidic extracted Fischer-Tropsch derived waxy paraffinic product stream, a modified aqueous acidic stream, and a third phase; and separating the at least one acidic Fischer-Tropsch derived waxy paraffinic product stream from the modified aqueous acidic stream and the third phase, wherein after the extraction step the contamination contained in the modified aqueous acidic stream and the third phase is greater than the contamination contained in the extracted Fischer-Tropsch derived waxy paraffinic product stream.

In response, it is the examiner's position that the combined Cain/Moore invention discloses the three phases as claimed (See Office action above under claims 25 and 26).

13. In the arguments on page 12, the Applicant argues that:

Cain in view of Moore does not disclose or suggest filtering the at least one acidic extracted Fischer-Tropsch derived hydrocarbon stream to remove at least a portion of the Al contamination in particulate form.

In response, it is the examiner's position that the above limitation has been discussed in the Office action above under claim 34.

14. In the arguments on page 13, the Applicant argues that:

In no way does Cain, Moore, or Zhou disclose or suggest providing an additive to the contents of the Fischer-Tropsch reactor to precipitate soluble contamination within the reactor. Applicants note that the Examiner asserts that it would have been obvious to one having ordinary skill in the art to have modified the process of Cain by adding the acid to the reactor because the same purification would take place with the added benefit of cost savings due to the reduced equipment requirement. Applicants maintain that it would not be practical or of added benefit to add a water solution of acetic acid to the Fischer Tropsch reactor. Fischer Tropsch reactions are conducted at temperatures of 400 - 550°F, as presently claimed. A water solution would significantly cool the reactor causing the reactor to need to be reheated to reaction temperature to conduct Fischer Tropsch reactions. Furthermore, a water solution would evaporate at the reaction temperatures, and thus, could not be used to extract the product inside the

reactor, unless first the reactor was cooled significantly and then heated again to reaction temperature.

In response, it is the examiner's position that combination of Cain, Moore and Auberger has already been addressed. Further, Zhou discloses a process for separating contaminant particles from an F-T derived stream (See abstract). The process comprises contacting the stream with a composition that comprises a surfactant, acid and water (See column 2, lines 11-67; column 3, lines 1-12). The reference also discloses that filtration techniques have been used to separate solid contaminants from F-T derived streams (See column 1, lines 29-40 and 50-53). Zhou further discloses that the contaminants can be removed in an internal filter within the slurry bed FT reactor (See column 1, lines 50-53). Obviously, Zhou is disclosing use of aqueous acid solution in the reactor itself. Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention to modify Cain invention and use the aqueous acid solution in the slurry reactor as disclosed by Zhou for contaminant removal in the reactor and thus reduce the size of the downstream separation unit.

15. In conclusion, the claimed invention is *prima facie* obvious over combined teachings of Cain, Moore, Auberger and Zhou.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PREM C. SINGH whose telephone number is (571)272-6381. The examiner can normally be reached on 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS 121010

/PREM C SINGH/
Examiner, Art Unit 1771